

# PEDAL DUSTBIN WITH TWO LIDS

## BACKGROUND OF THE INVENTION

### 5 1. Field of the invention

The present invention relates to a pedal dustbin, more particularly one, which has a main lid pivoted to an upper end of the bin body, a second lid capable of sliding on the main lid for covering an opening of the main lid, and a pedal, and which is made such that the second lid will  
10 be opened as soon as the pedal is depressed, and the main lid won't be opened unless the pedal is depressed for a longer distance with large force.

### 2. Brief Description of the Prior Art

Referring to Fig. 13, a conventional pedal dustbin includes a  
15 container body 10, a pedal 20, a connecting rod 30, a pushing rod 40, and a lid 50. The lid 50 is pivoted to upper end of the container body 10. The connecting rod 30 is arranged in a lower portion of the container body 10 to function as a lever, and has an outer end projecting out from the container body 10. The pedal 20 is connected to the outer end of the  
20 connecting rod 30. The pushing rod 40 is positioned upright close to inner side of the container body 10, and pivoted to an inner end of the connecting rod 30 at a lower end thereof, and pivoted to the lid 50 at an upper end. Thus, the lid 50 will be pivoted upwards to an open position when the pedal 20 is depressed. And, when the user stops depressing the

pedal 20, the lid 50 will move back to the closed position automatically due to gravity.

The dustbin is convenient to use because the lid can be opened by means of depressing the pedal. However, such pedal dustbin structure has a disadvantage because a dustbin is equipped with only one lid: people always have to open the lid, which covers the whole opening of the container body, no matter what size of waste they are throwing into the dustbin. And lids of large pedal dustbins can be very heavy in weight because they are large. Consequently, it takes much strength to depress the pedals to open the lids of large pedal dustbins. In other words, large pedal dustbins, and pedal bins with heavy lids are not convenient to use.

Furthermore, plastic pedal dustbins of such structure are prone to have damage caused to them because of improper fitting and use as well as large force that will be exerted on the joint between the pushing rod and the lid, and the joint between the connecting rod and the pushing rod when the pedal is depressed. And, the dustbin can't be repaired when it is damaged.

## SUMMARY OF THE INVENTION

It is a main object of the present invention to provide a pedal dustbin to overcome the above disadvantages.

The pedal dustbin of the present invention includes a container body, a main lid pivoted to upper end of the container body, a second lid

capable of sliding on the main lid for covering an opening of the main lid with, a pedal, and a holding tube having a slide movably confined therein. A first rope is connected to the pedal and the slide at two ends while a second rope is connected to the slide and the second lid at two  
5 ends thereof such that the second lid will be opened immediately after the pedal is depressed. An elastic element is provided for biasing the second lid back to the original position when the user stops depressing the pedal. A third rope is connected to the main lid at upper end, and passed through the slide, and has a stopping block connected to the lower  
10 end thereof, which stopping block is a distance away from the slide before the pedal is depressed; thus, the main lid will be opened as soon as the third rope is pulled downwards, and the third rope won't be pulled downwards unless the pedal is depressed to such a position that the slide contacts the block to make the third rope pulled downwards together  
15 with it.

The second and the third ropes are passed through respective adjustment mechanisms, which can be adjusted in length. Thus, in case the second and the third ropes are too tight or too loose, the adjustment mechanisms are adjusted in the length such that the lids can be  
20 effectively opened when the pedal is used.

## BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will be better understood by referring to the accompanying drawings, wherein:

Fig. 1 is a perspective view of the inside of the pedal dustbin with  
5 two lids according to the present invention,

Fig. 2 is a vertical section of the pedal dustbin with two lids according to the present invention,

Fig. 3 is a partial enlarged view of Fig. 2,

Fig. 4 is a horizontal section of an upper portion of the dustbin,

10 Fig. 5 is a perspective view of the inside of the holding tube of the pedal dustbin in the present invention,

Fig. 6 is a horizontal section of an upper portion of the dustbin,

Fig. 7 is a partial vertical section of the present dustbin,

Fig. 8 is a vertical section of the present dustbin with the pedal  
15 being depressed so as to open the second lid,

Fig. 9 is a partial side view of the dustbin, showing the movement of the second lid and the associated parts when the pedal is depressed,

Fig. 10 is a top view of the dustbin, showing the movement of the second lid and the associated parts when the pedal is depressed,

20 Fig. 11 is a side view of the dustbin with the first lid being opened,

Fig. 12 is a partial enlarged view of Fig. 11, and

Fig. 13 is a side view of the conventional pedal dustbin.

## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to Figs. 1 to 4, a preferred embodiment of a pedal dustbin includes a container part 1, a pedal 11, first, second and third  
5 pulling ropes 12, 13 and 14, first and second lids 2 and 4, a holding tube 5, and first and second adjustment mechanisms 6.

The first lid 2 is securely connected to a pivotal rod 3, which is pivoted to a rear edge of an upper end of the container body 1, for covering an upper opening (not numbered) of the container body 1 with.  
10 The first lid 2 has an opening 21 thereon, two parallel rails 22 on two sides of the opening 21, and a post 23 projecting downwards from a lower side thereof. The second lid 4 is movably fitted to the rails 22 of the first lid 2 for covering the opening 21 of the first lid 21 with; thus, the second lid 4 can be opened for allowing waste to be thrown into the  
15 container body 1 through the opening 21. A connecting element 43 is pivoted to the second lid 4 at one end.

Each of the adjustment mechanisms 6 includes a fixed part 61, and a stopping part 62; the fixed part 61 has a through hole 611, and an inner threaded portion 612 while the stopping part 62 has a through hole 621,  
20 and an outer threaded portion 622; the stopping part 62 is connected to the fixed part 61 with the outer threaded portion 622 being screwed into the inner threaded portion 612, and with the through hole 621 being aligned with the through hole 611. The fixed part 61 of the first

adjustment mechanism 6 is securely fitted on a lower side of the first lid 2 while the fixed part 61 of the second adjustment mechanism 6 is securely fitted on an inner side of the container body 1.

5 An actuating rod 41 is pivoted to the post 23 of the first lid 2 at a portion between first and second ends thereof. An elastic element 42 is positioned around the post 23, and connected to the actuating rod 41 and the first lid 2 at two ends; thus, the elastic element 42 will bias the actuating rod 42 back to an original position when an external force disappears that has been exerted on the actuating rod 42 to angularly  
10 displace the same. The actuating rod 42 is pivoted to the other end of the connecting element 43 at the first end thereof while an elastic element 130 is positioned between the second end of the actuating rod 42 and the stopping part 62 of the first adjustment mechanism 6; thus, the elastic element 130 will help bias the actuating rod 42 back to the original  
15 position when an external force disappears that has been exerted on the actuating rod 42 to angularly displace the same; the second lid 4 will be over the opening 21 of the first lid 2 when the actuating rod 42 is moved to the original position owing to the connection of the actuating rod 42 with the connecting element 43.

20 The holding tube 5 is securely fitted on the inner side of the container body 1 under the fixed part 61 of the second adjustment mechanism 6. Referring to Fig. 5, the holding tube 5 has openings (not numbered) at upper and lower ends, and has a slide 51 confined therein,

which can move along the holding tube 5. A covering body 141 is securely connected to the upper end of the holding tube 5 and the fixed part 61 of the second adjustment mechanism 6 at two ends so as to communicate with inside of the holding tube 5 as well as the through  
5 holes 611 and 621 of the second adjustment mechanism 6. And, a covering body 131 is securely connected to the upper end of the holding tube 5 and the fixed part 61 of the first adjustment mechanism 6 at two ends so as to communicate with inside of the holding tube 5 as well as the through holes 611 and 621 of the first adjustment mechanism 6. A  
10 covering body 121 is securely connected to the container body 1 and the lower end of the holding tube 5.

The pedal 11 is pivoted to a front of a lower portion of the container body 1, and is biased upwards to a not-depressed position by means of an elastic element 110, which is connected to the pedal 11 at  
15 one end, and the container body 1 at the other end. The first pulling rope 12 is passed through the covering body 121 as well as the lower opening of the holding tube 5, and is connected to the pedal 11 at a lower end, and the slide 51 at an upper end; thus, the first pulling rope 12 will be pulled, and the slide 51 moved downwards when the pedal 11 is  
20 depressed. .

The second pulling rope 13 is passed through the covering body 131 as well as the through holes 611 and 621 of the first adjustment mechanism 6, connected to the slide 51 at a lower end, and connected to

the second end of the actuating rod 41 at an upper end thereof; thus, the elastic element 130, which is positioned between the second end of the actuating rod 41 and the stopping part 62 of the first adjustment mechanism 6, will be compressed, and the second lid 4 will be opened immediately after the pedal 11 is depressed, as shown in Figs. 8 and 10.

The third pulling rope 14 is passed through the through holes 611 and 621 of the second adjustment mechanism 6, the covering body 141, the upper opening of the holding tube 5, and the slide 51. A stopping block 140 is securely connected to a lower end of the third pulling rope 14. The third pulling rope 14 is further connected to the pivotal rod 3 at an upper end thereof such that the pivotal rod 3 will be angularly displaced, and the first lid 2 opened when the third pulling rope 14 is pulled downwards. The stopping block 140 will be a distance away from the slide 51 when the pedal 11 is not used, i.e. when the lids 2 and 4 are in the closed position; thus, the third pulling rope 14 will not be pulled downwards during depression movement of the pedal 11 until the pedal 11 is depressed to such a position (Figs. 11 and 12) that the slide 51 comes into contact with the stopping block 140 to make the stopping block 140 move downwards together with it.

Furthermore, an elastic element (not shown) can be engaged with the pivotal rod 3 and the second adjustment mechanism 6 at two ends thereof.

To open the second lid 4 for allowing small waste to be thrown



into the container body 1 through the opening 21 of the first lid 2 without opening the first lid 2, referring to Figs. 8 to 10, the pedal 11 is depressed with small force for such a distance that the second pulling rope 13 and the slide 51 are pulled downwards by the first pulling rope 12, and such  
5 that the stopping block 140 of the third rope 14 isn't moved down by the slide 51; thus, the second lid 4 is slid along the rails 22 and opened while the first lid 2 isn't moved. As soon as the user stops depressing the pedal 11, the elastic elements 130 and 42 will make the actuating rod 41 move back to the original position; thus, the second lid 4 is closed.

10 To open the first lid 2 for allowing large waste to be thrown into the container body 1 through an upper opening of the container body 1, referring to Figs. 11 and 12, the pedal 11 is depressed for a longer distance with large force such that besides pulling the second pulling rope 13 and the slide 51 downwards, the first pulling rope 12 makes the  
15 slide 51 pull the third pulling rope 14 downwards; thus, the pivotal rod 3 is turned, and the first lid 2 opened. As soon as the user stops depressing the pedal 11, the first lid 4 will move back to the closed position automatically owing to gravity.

The length of the first adjustment mechanism 6 is adjusted by  
20 means of angularly displacing the stopping part 62 relative to the fixed part 61 in case the second pulling rope 13 is too tight or too loose; thus, the second lid 4 can be effectively and properly opened when the pedal 11 is depressed for a short distance. And, the length of the second

adjustment mechanism 6 is adjusted by means of angularly displacing the stopping part 62 relative to the fixed part 61 in case the third pulling rope 14 is too tight or too loose; thus, the first lid 2 can be effectively and properly opened when the pedal 11 is depressed for said longer  
5 distance.

From the above description, it can be easily understood that the present pedal dustbin with two lids has the following advantages:

1. The dustbin is simple in the structure, and easy to assemble.  
Furthermore, being equipped with ropes as the transmission, the  
10 dustbin is less likely to have damage caused to it when the pedal 11 is being depressed to open the lids.
2. People only have to depress the pedal 11 to open the second lid 4 with small force in case they want to throw small waste into the dustbin; people have to depress the pedal 11 so as to open the first lid 2, which  
15 is larger and heavier than the second lid 4, only when they want to throw large waste into the dustbin. In other words, being equipped with the second lid 4, the dustbin allows people to save their strength.